Of ſuch plane about ſixty feet muſt deſcend into the lower canal, but of a leſs angle then the firſt; it ſhould not exceed four degrees, that by lying flat it may let the boat into the canal without danger of filling. At the part where this laſt plane joins the firſt, in entering the lower canal the angle muſt not be left ſharp, but the union formed by a hollow curve, which will let the boat down with a regular motion, without the danger of her bow, or ſtern, touching either of the planes; which would be the caſe if the two planes were joined by a ſharp angle.

Again, on the ſummit where the plane turns into the upper canal, the union muſt be a regular curved bridge, which will prevent the bottom of the boat between the wheels from touching the planes; which would be the caſe if the planes were united in a ſharp point, (comparatively) like the ridge of a houſe.

Each of thoſe planes, as they proceed into the upper and lower canals, muſt widen from two to about three feet; or have two rails, placed juſt above the water, in order with the greater eaſe to guide the boat to the exact ſituation; that her wheels may touch in the right part of the plane, and prevent her miſſing the iron rails.

2dly, Having formed the planes (ſee the Top Drawing, which repreſents the Upper Works), A, in the ground plan, exhibits the mouth of the tub pit, and ſhould be ſufficiently large to receive a tub which will contain eight tons of water. A tub nine feet diameter and five deep will contain upwards of nine tons, therefore ſufficient room for eight without danger of ſpilling; hence, if the pit is from ten to eleven feet diameter it will be ſufficient; which pit may be walled with brick, or ſtone, as moſt convenient, like a common coal-pit ſhaft or well.

3dly, From the bottom of the pit a ſough, B, to the lower canal, which needs not be more than three or four feet diameter; in fact, as ſmall and cheap as the nature of the meaſures will admit; as it is of no other uſe than to let off the water diſcharged from the tub in the pit.

4thly, A tub muſt be formed, as before mentioned, capable of containing eight tons of water, nine feet diameter, five deep; this may be made of wood, or ſheet iron, like the boiler of a ſteam engine, and having in the bottom a hole from twelve to eighteen inches diameter, acroſs the hole a ſtrong bar of iron, and in a right line with the bar one muſt be placed acroſs or near the top of the tub; through each of the bars, and exactly in the centre of the tub, there muſt be a hole to receive a perpendicular bar, ſomething more than one inch diameter; on the laſt bar a valve is placed, ſufficiently large to cover the hole in the tub; and ſo placed on the perpendicular, that when it is ſhut the bar will project about eighteen inches below the bottom of the tub: hence the valve will play perpendicularly, being guided by the perpendicular paſſing through the croſs bars of the tub. The uſe of the eighteen-inch projection below, is in order that, when the tub deſcends to the bottom of the pit, the bar may ſtrike the bottom of the pit, and riſing with the valve by means of the blow, may diſcharge the water from the tub. See the Figure of the Tub in the Plate of Parts *.

5thly, A trough muſt be formed, from about three feet below the top water of the upper canal, to the centre of the diameter of the pit, in which a common valve may be placed of twelve or eighteen inches diameter, in order to draw water into the tub.

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* There may alſo be guides, to preſerve the tub in a direct perpendicular through the pit.

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